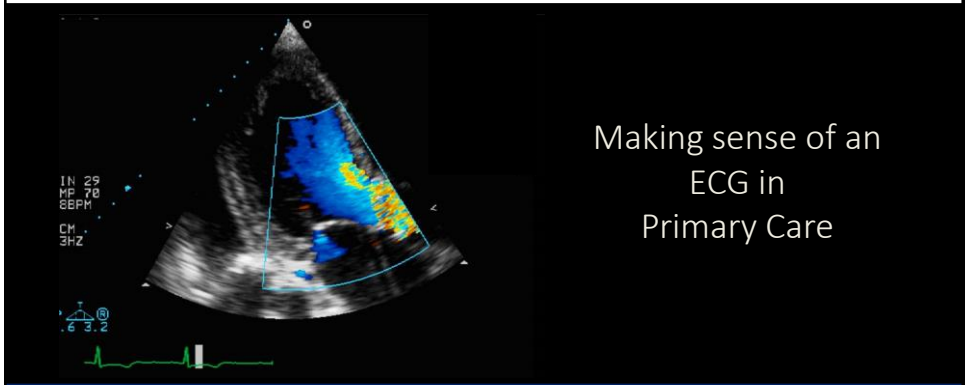


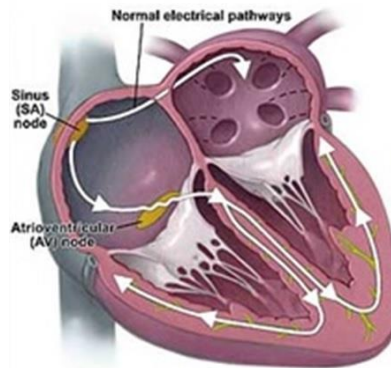
# INTERPRETING THE 12 LEAD ECG



Making sense of an ECG in Primary Care

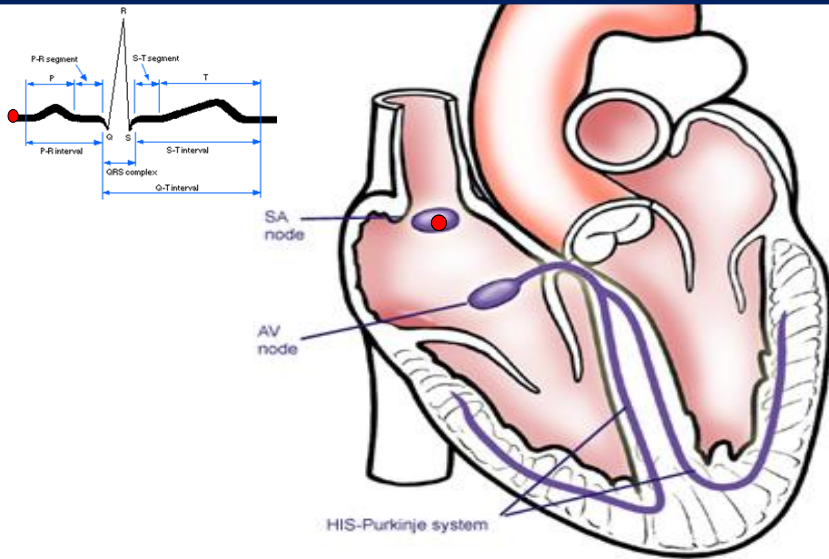
Dr Yassir Javaid  
Primary Care Cardiovascular Lead  
East Midlands Strategic Clinical Network

## The ECG trace: sinus rhythm



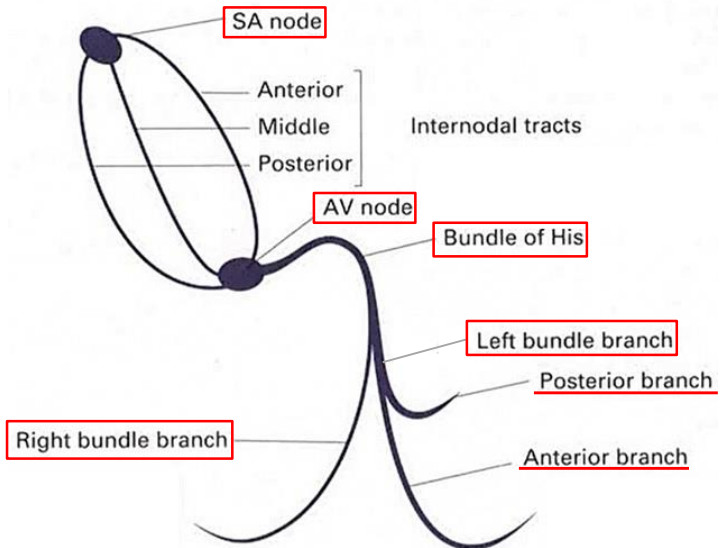
Kirton K. What you should know about abnormal heart beat. PositiveMed. Available at <http://positivemed.com/2013/12/03/know-abnormal-heart-beat/>. Accessed February 2017

## Sinus rhythm...



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## Cardiac conduction system



Adapted from Cardiac Rhythm Interpretation. Electrophysiology. Available at: <http://www.free-ed.net/sweethaven/MedTech/Cardiac/571.asp?INum=0102>. Accessed April 2017

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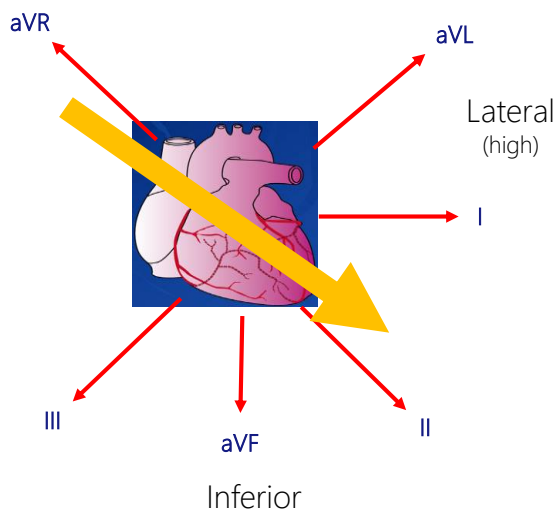
What the 12-lead sees....



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'Basics' of 12 lead - Electrophysiology

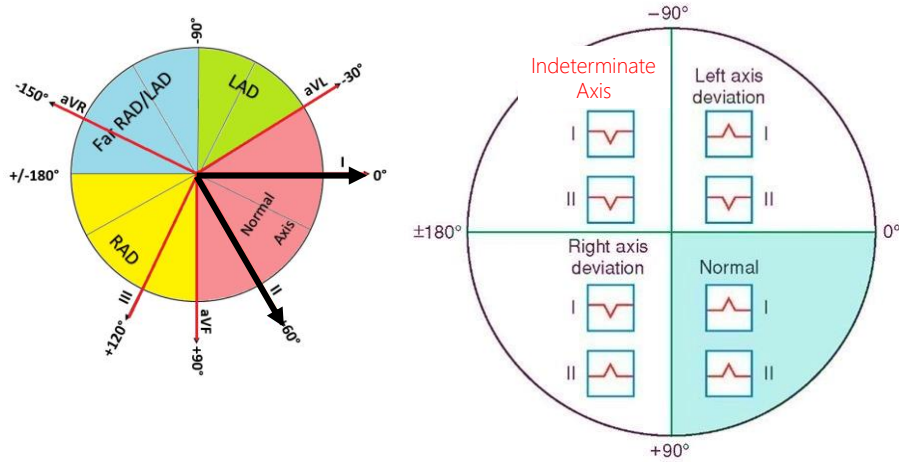
The limb leads (vertical plane):



Information courtesy of Dr Yassir Javaid

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## The Interventional Cardiologist's Approach (Leads I and II)

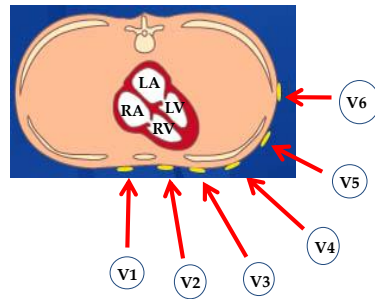
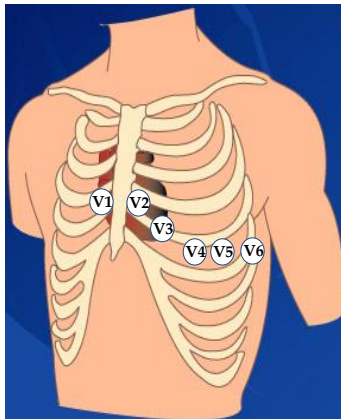


Information courtesy of Dr Yassir Javid

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## 'Basics' of 12 lead - Electrophysiology

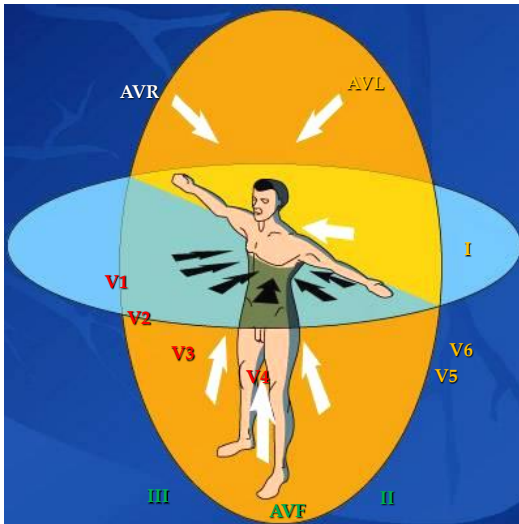
The precordial leads (horizontal plane):



Information courtesy of Dr Yassir Javid

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## All 12 'views' of the heart



Anterior **V1, V2, V3, V4**

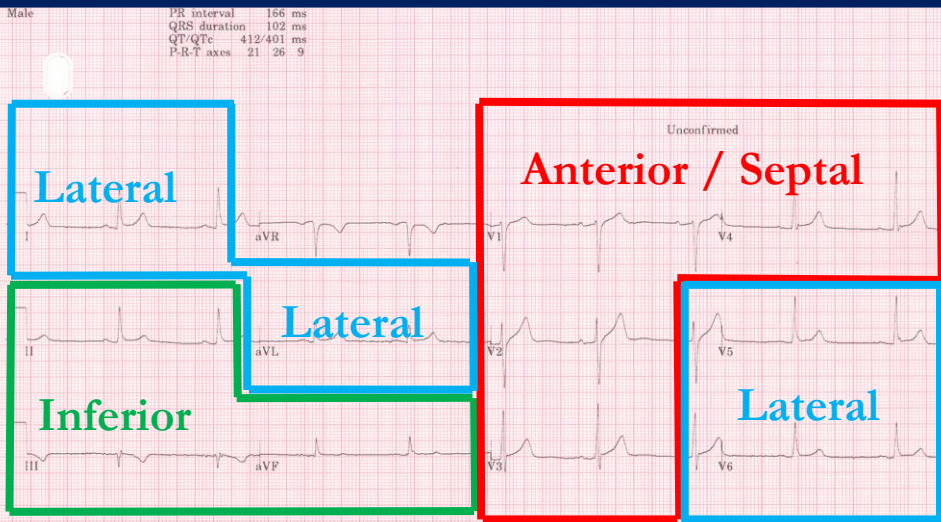
Lateral **I, AVL, V5, V6**

Inferior **II, III, AVF**

Information courtesy of Dr Yassir Javid

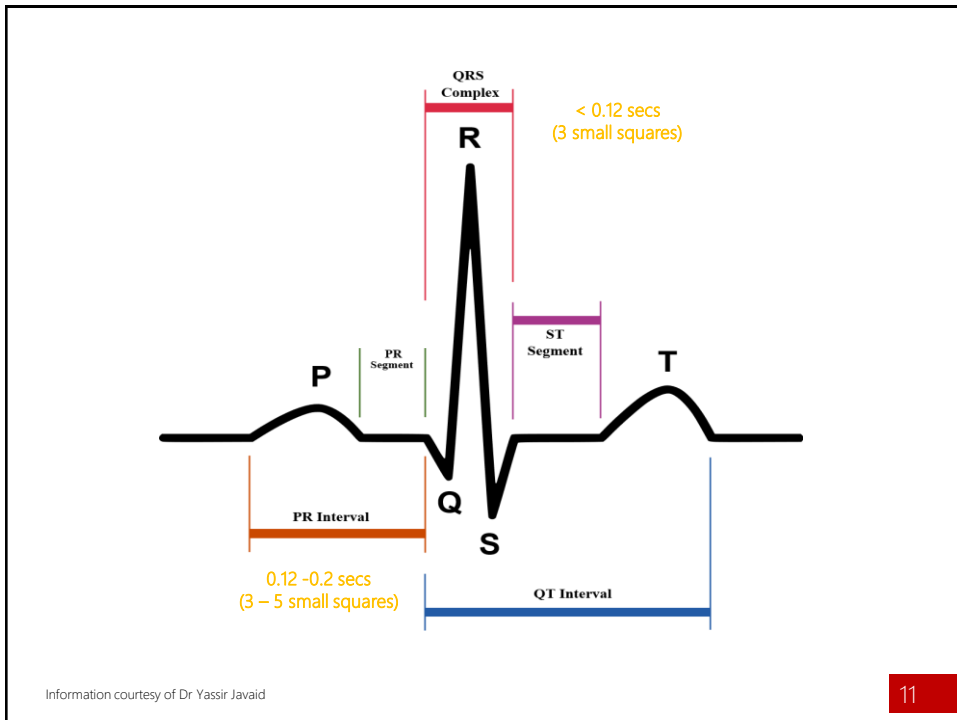
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## ECG territories (relating mainly to LV)



Information courtesy of Dr Yassir Javid

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## How to interpret a rhythm

- What is the ventricular (QRS) rate?
  - If regular =  $300 / \text{no of large squares between QRS complexes}$
  - If irregular = no of QRS complexes in 30 large squares (6 secs) x 10
- Is the QRS rhythm regular or irregular?
- Is the QRS duration normal or prolonged (i.e. > 3 small squares)
- Is atrial activity present?
- How is atrial activity related to ventricular activity?
- What is the cardiac axis?

Information courtesy of Dr Yassir Javaid

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## Cardiac rhythm assessment

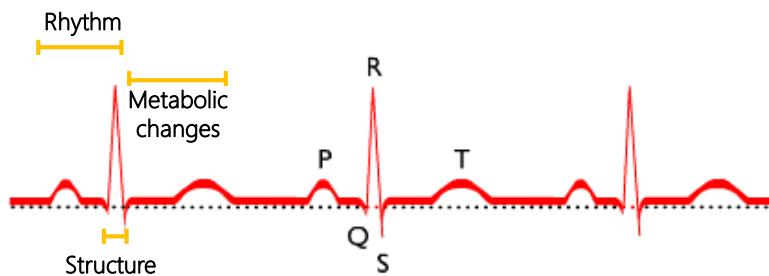
- MANUAL pulse checking will give a strong clue to rhythm
  - Now often ignored!
  - Is it regular?
  - Does the strength of pulse vary?
  - What is the rate?
- ECG to monitor or confirm rhythm



Information courtesy of Dr Yassir Javid

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## Components of the ECG



Information courtesy of Dr Yassir Javid

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